UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

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iRACING.COM MOTORSPORT SIMULATIONS, LLC, a Delaware Limited Liability Company,	: : :	Civil Action No. 05-11639 NG
Plaintiff,	: :	
v.	: :	AFFIDAVIT OF RANCE J. DeLONG IN
TIM ROBINSON, individually and d/b/a www.ow-racing.com, www.torn8oalley.com and www.First-Racing-Sucks.com	: : :	SUPPORT OF MOTION FOR PARTIAL SUMMARY JUDGMENT
Defendant.	: : :	
	X	

I, Rance J. DeLong, upon oath depose and say as follows:

1.   I am President and CEO of Trusted Systems Laboratories, Staff

Scientist for Security and High Assurance at LynuxWorks, and an Adjunct

Professor at Santa Clara University. I have over twenty-seven years of

experience in the field of computer software and security-related technologies. I

have testified as an expert witness in this field two times in the last four years.

My resume reflecting my qualifications is attached as Exhibit A.

<u>Summary</u>

2.   The computer files distributed by defendant Tim Robinson

("Robinson") through his websites are derivative versions of NASCAR® Racing

2003 Season software ("NASCAR® 2003"), which contain in excess of 99

percent the original NASCAR® 2003 software code, with minor changes to the

look-and-feel characteristics of the software program.

3.   In addition, Robinson distributed two files through his websites that circumvented the SecuROM™ copy protection contained in NASCAR® 2003, thus permitting persons who downloaded Robinson's files to operate Robinson's derivative versions of NASCAR® 2003 without licensing an original copy of NASCAR® 2003 and further permitting those persons to copy and redistribute Robinson's derivative versions of NASCAR® 2003 to others to use without license.

Background

4.   Counsel for iRacing.com Motorsport Simulations, LLC ("iRacing") provided to me, in early November 2005, a CD labeled "Robinson Data" that includes: an executable file labeled OWSC.exe ("OW-Racing 2004 Mod"), a ZIP file entitled owsc_nocd_temp.zip ("NO-CD File") and a ZIP file entitled owr2k5_v1.0.0.1.zip ("OW-Racing 2005 Mod"). Some of the files contained on this CD were in ZIP format, a commonly used format that stores a collection of files in compressed form to save space and shorten download times. iRacing's counsel advised me that the Robinson Data CD contained the files that defendant Tim Robinson made available for download that are issue in this action. I received the NASCAR® 2003 product CD in a separate shipment also in November 2005.

5.   From June through August 2006, I spent approximately eighty (80) hours investigating and analyzing the following materials: (a) NASCAR® 2003; (b) an instance of a legitimate distribution CD-ROM for that product (the "NR2003 CD"); (c) the executable files that CD contained, including NR2003.exe; and (d)

an updated version of NR2003.exe (NR2003.exe version 1.2.0.1). I also

investigated and analyzed: (a) the OW-Racing 2004 Mod, (so named as the file

bears a September 2004 date); (b) the NO-CD File that, when uncompressed,

yields an executable file named NOCD_OWSC.exe; and (c) the OW-Racing

2005 Mod which when uncompressed yields the file owr2k5_v1.0.0.1.exe, which

is an installer application that contains and installs the files comprising the OW

Racing 2005 Mod including OWR05.exe.

6.   To perform this investigation and analysis I set up a computer as

my laboratory and equipped it with several software tools. The computer was a

standard Intel processor-based PC running Microsoft Windows XP Home Edition,

upon which I installed the following software tools: the Cygwin environment,

UltraEdit, UltraCompare, IDA Pro, A-Ray Scanner, SecuromID, WinRAR, and

PEditor. These are all available either commercially or as shareware or

freeware. I copied the NR2003 CD into a directory and installed NASCAR® 2003

from the NR2003 CD using the installer provided. I made a snapshot of this

directory and of each successive version of it: (1) after I applied the version

1.2.0.1 update, (2) after I applied the OW-Racing 2004 Mod, and (3) after an

uninstall.

7.   I made another copy of the updated NASCAR® 2003 installation in

the directory named "NASCAR Racing 2003 Season," to which I applied the OW-

Racing 2005 Mod, which created the directory "Open Wheel Racing 2005

Season". A-Ray Scanner and SecuromID permitted me to determine which files

within the snapshot directories exhibited the signature these tools use to identify

SecuROM™ (a copy protection scheme discussed further below) protected files.

I used PEditor and IDA Pro to examine the internal structure of the executable

files, and to disassemble and to execute them under a debugger. I used

UltraEdit with UltraCompare to compare the corresponding sections of the

executables being analyzed. I also used UltraEdit by itself to determine the

capabilities of the tool (since this is a tool defendant Tim Robinson claimed to

use to create the subject OWSC.exe, NOCD_OWSC.exe and OW-Racing 2005

Mod files). I used various tools included in the Cygwin environment to perform a

variety of utility operations on files and directories. I inventoried each snapshot

and gathered statistics from each of the subject executable files identified below,

compiling comparisons between the files. I investigated what is in each of the

key executables identified below and what they do when executed.

<div align="center">NASCAR® 2003</div>

8.   NR2003.exe is the executable file for the original version of

NASCAR® 2003 released by Sierra On-Line, Inc. ("Sierra").

9.   NR2003.exe version 1.2.0.1 is an updated version of the

executable file for NASCAR® 2003 that Sierra also published. Because

NR2003.exe version 1.2.0.1 is a published update to NR2003.exe, I refer to both

versions collectively as NR2003.exe.

10.   An executable file contains both instructions to the computer in the

form of machine code and data upon which some of those instructions operate.

Upon installation of NASCAR® 2003, the executable file NR2003.exe is copied to

the user's computer hard drive.

11.   NR2003.exe contains machine-readable software code that implements a complex simulation of the physical behavior of a racing car. NR2003.exe also contains data that are parameters of that simulation. This simulation is at the core of the creative expression that is NASCAR® 2003 and is a large part of the creative value manifested in the software code.

12.   NR2003.exe incorporates a sophisticated anti-copying protection mechanism called SecuROM™ distributed by Sony DADC ("Sony") and designed to protect software from piracy. Accordingly, SecuROM™ is a technological measure that controls access to NASCAR® 2003. In effect, SecuROM™ creates a lock on the NR2003.exe application using the original NR2003 CD-ROM disk as the key that allows the user to run NASCAR® 2003 only if the NR2003 CD is in the computer's CD drive. This SecuROM™ mechanism protects against piracy by preventing a third party from obtaining and running an illicit copy of the NASCAR® 2003 software without also having an original NR2003 CD in the computer's disk drive.

13.   To incorporate the SecuROM™ mechanism into an application such as the NASCAR® 2003 simulation embodied in the NR2003.exe, a developer prepares the application for distribution with the use of tools Sony provides. This preparation "locks" the application's executable and packages it together with SecuROM™ code and data in the distributed executable file. So, for example, when a user runs the SecuROM™ protected NR2003.exe file, the file first executes the SecuROM™ code, which checks whether an NR2003 CD is present in the user's CD drive. If no such CD is present, the executable will not

run the protected application. If the NR2003 CD is present, SecuROM™ uses information derived from the CD to "unlock" the application and then passes control to the application so that the user may operate the NASCAR® 2003 software to play the game.

14.   NR2003.exe is an executable file in Portable Executable ("PE") format that is organized into seven sections. Four of these sections provide the functionality for NASCAR® 2003. These functional sections are designated ".TEXT", ".RDATA", ".DATA", and ".RSRC". The .RSRC section is the "Resources" Section for NASCAR® 2003, which provides information that determines the game's outward characteristics, shape, and look-and-feel. The final three sections of the NR2003.exe file provide for the SecuROM™ protection mechanism. These sections are designated .OJHRZ, .NEHPRT, and .IDATA.

15.   In my opinion, NASCAR® 2003 is the product of exceptional software design practice. Minor changes in the NR2003.exe code and data may result in significant changes to the response and look-and-feel of the game's functionality. This, in my opinion, is of great benefit to the software game's owner, as it permits the owner to easily leverage the initial development investment in creating future versions and variations of the game.

<u>The OW-Racing 2004 Mod</u>

16.   The OW-Racing 2004 Mod includes the file OWSC.exe, which in my opinion is a modified and derivative version of NR2003.exe version 1.2.0.1. I based this opinion on the following findings.

17.   The OWSC.exe executable in the OW-Racing 2004 Mod includes modifications to NR2003.exe version 1.2.0.1 that change the response and look-and-feel of the cars involved in the game into those of "Open Wheel" cars. The modifications to NR2003.exe that produce OWSC.exe leave intact the SecuROM™ protection that requires an NR2003 CD be present to run the game. OWSC.exe is identical in file size and PE structure to NR2003.exe version 1.2.0.1.

18.   Whoever created the OW-Racing 2004 Mod made deliberate and targeted modifications to NR2003.exe version 1.2.0.1 to adjust its operating characteristics. Nevertheless, the OW-Racing 2004 Mod is more than 99.9 percent original NR2003.exe code and data and less than one tenth of one percent modified code and data. For example, only 2 bytes of the 4096 bytes in the PE header were modified, only 575 of the 3,047,424 bytes of the .TEXT section were modified; only 186 of the 204,800 bytes of the .RDATA section were modified, only 93 of the 286,720 bytes of the .DATA section were modified, and 122,461 of the 270,336 bytes of the .RSRC section were modified. Overall, OWSC.exe is 97.7% identical to the 5,423,105 bytes of the NR2003.exe file. The OW-Racing 2004 Mod does not modify the SecuROM™ sections.

19.   Accordingly, I conclude that the person who created the OW-Racing 2004 Mod copied and modified the NR2003.exe version 1.2.0.1 file included in NASCAR® 2003 and the OW-Racing 2004 Mod is a derivative version of NASCAR® 2003.

The NO-CD File

20.   The NO-CD File is a ZIP file named owsc_nocd_temp.zip that, when uncompressed, yields the NOCD_OWSC.exe file. The NOCD_OWSC.exe file is a modified and derivative version of NR2003.exe version 1.2.0.1 that carries forward the modified functionality of OWSC.exe and also circumvents the SecuROM™ copy protection.

21.   The NOCD_OWSC.exe file has the same four functional sections of NR2003.exe version 1.2.0.1 including the modifications made to create OWSC.exe. However, the NOCD_OWSC.exe file has additionally circumvented the SecuROM™ protection and removed the three SecuROM™ sections designated .OJHRZ, .NEHPRT, and .IDATA. Because of the removal of these three sections, the NOCD_OWSC.exe file is approximately two megabytes smaller in size than NR2003.exe version 1.2.0.1 and OWSC.exe.

22.   NOCD_OWSC.exe includes all of the modifications made from NR2003.exe (previously made to create OWSC.exe) discussed in paragraphs 16 through 19 above that change the response and look-and-feel of the cars involved in the game into those of "Open Wheel" cars.

23.   But in addition, the NOCD_OWSC.exe file allows users to run this modified version of NASCAR® 2003 without having an NR2003 CD installed in their computer disk drive. The party who created NOCD_OWSC.exe and OWR05.exe circumvented the SecuROM™ protection by means of a sophisticated "crack". The term "cracking" is colloquially applied to the activity of circumventing copy protection schemes. A "crack" is the end result of such an

8

activity: either the target software with copy protection removed or a tool to remove copy protection of a particular type or from a particular piece of software. Though a crack may have been difficult to produce, subsequently it may easily be used by someone with no knowledge of cracking.

24.   By thus defeating SecuROM™, a person who downloaded the NOCD_OWSC.exe file may freely transfer a derivative version of NASCAR® 2003 to other users who may operate OW-Racing 2004 Mod without owning a licensed version of NASCAR® 2003 or possessing an NR2003 CD.

25.   I conclude that the party who created the NOCD_OWSC.exe file copied and modified the NR2003.exe version 1.2.0.1 file included in NASCAR® 2003 and thus created derivative versions of NASCAR® 2003.   In other words, the NOCD_OWSC.exe is a variant of the OWSC.exe file, which was created primarily for the purpose of circumventing the SecuROM™ protection that controls access to NASCAR® 2003 and prevents unlicensed copying and distribution of NASCAR® 2003. The only significant use of NOCD_OWSC.exe beyond that of OWSC.exe is to circumvent SecuROM™.

26.   The circumvention of SecuROM™ protection allows a larger audience of unlicensed users to use the "Open Wheel" derivative version of NASCAR® 2003.

<u>The OW-Racing 2005 Mod</u>

27.   The OW-Racing 2005 Mod is a ZIP file named owr2k5_v1.0.0.1.zip that, when uncompressed, yields the file owr2k5_v1.0.0.1.exe. The owr2k5_v1.0.0.1.exe file is an executable installer. When a user runs

owr2k5_v1.0.0.1.exe, the executable goes through a polished installation procedure that results in the creation of a directory called "Open Wheel Racing 2005 Season" on the user's computer. In this directory, there are other directories and files that mimic the structure of a NASCAR® 2003 installation.

28.   One particular file of interest, OWR05.exe, was a subject of this investigation. The file OWR05.exe, also packaged in the OW-Racing 2005 Mod, is also a modified version of NR2003.exe similar in form and function to NOCD_OWSC.exe. OWR05.exe includes all of the modifications made from NR2003.exe (previously made to create OWSC.exe) that change the response and look-and-feel of the cars involved in the game into those of "Open Wheel" cars.

29.   The OW-Racing 2005 Mod installer goes through an installation process like that found in a commercial consumer software product and results in the creation of a separate directory that looks like a distinct product with its own distinct executables, including OWR05.exe. Even though OWR05.exe is a modified copy of NASCAR® 2003, it does not require the presence of a NR2003 CD in the computer's disk drive, which could have the result that a user running this version is unaware that they have installed and run an unlicensed version of NASCAR® 2003.

30.   I conclude that OWR05.exe, like NOCD_OWSC.exe, is a modified and derivative version of NR2003.exe that circumvents the SecuROM™ copy protection.   In my opinion, the OWR05.exe was primarily created to provide a

derivative version of NASCAR® 2003 that circumvents the SecuROM™

protection that normally controls access to NASCAR® 2003.

31.   Defeating the SecuROM™ allows persons who download this file to

freely transfer the file to users who may operate OW-Racing 2005 without owning

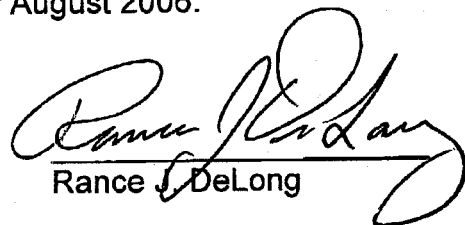a licensed version of NASCAR® 2003 or possessing an NR2003 CD.

32.   Additionally, I note that both the OW-Racing 2004 Mod and the

OW-Racing 2005 Mod include server executables that are derivative versions of

the server executable provided with NASCAR® 2003.

CONCLUSIONS

33.   The party or parties who created and distributed the OW-Racing

2004 Mod, the NO-CD File and the OW-Racing 2005 Mod copied and modified

the NR2003.exe version 1.2.0.1 file included in NASCAR® 2003, and these are

all derivative versions of NASCAR® 2003.

34.   The NOCD_OWSC.exe and OWR05.exe files were created to

circumvent the SecuROM™ protection embedded in NASCAR® 2003, which

controls access to NASCAR® 2003 and prevents unlicensed copying and

distribution of NASCAR® 2003.

SUSCRIBED AND SWORN TO on this 11th day of August 2006.

Rance J. DeLong

11

<u>Certificate of Service</u>

I, Irwin B. Schwartz, attorney for Plaintiff iRacing.com Motorsport Simulations, LLC, hereby certify that on this 11th day of August 2006, I filed the foregoing document with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to: Joseph F. Ryan, Lyne Woodworth & Evarts LLP, 600 Atlantic Avenue, Boston, MA 02210, counsel for Defendant Tim Robinson.

__**/S/ Irwin Schwartz**_____

Irwin B. Schwartz

Curriculum Vitae

Rance J. DeLong

25700 Adams Road, Los Gatos, CA 95033
Tel: 408 353 4102   Cell: 408 206 6990   Fax: 408 715 2531

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Expertise

- Computer and Network Security
- Multi-Level Security
- Security Policies and Models
- High-Assurance Techniques and Tools
- Programming Languages
- Operating Systems
- Software Engineering
- Quality Engineering

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Professional Summary

Mr. DeLong is President and CEO of Trusted Systems Laboratories, Staff Scientist for Security and High-Assurance at LynuxWorks, Adjunct Professor in the Center for Advanced Study and Practice of Information Assurance (CASPIA) at Santa Clara University, and occasional expert witness for computer software- and security-related litigation. Mr. DeLong has twenty-seven years of research, engineering and management experience with security-related technologies, software engineering, and product development.

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Technical Skills

Standards:
- TCSEC, ITSEC, Common Criteria
- POSIX
- IEEE SW Engineering Standards
- SEI SW/SSE CMM
- DO-178B
- PKCS
- XML
- Java, EJB, J2EE, J2ME, Jini

Operating Systems:
- Unix (since v6), BSD, System V
- AIX, HP/UX, Irix, Linux, etc.
- Sun Solaris & Trusted Solaris
- Windows 95/98/NT/XP
- PalmOS
- MacOS
- Partitioning Kernels
- Multi-level secure OS

Protocols:
- TCP/ IP
- UDP
- IPSec, RIPSO, CIPSO
- SSL
- SKIP
- Kerberos
- NIS Plus
- RPC
- S/MIME
- HTTP/SHTTP
- SNMP

Tools:
- Lex & Yacc (compiler/parser building)
- NRL Protocol Analyzer
- STeP (Stanford Temporal Prover), ACL2, Otter (automated reasoning)
- SPIN (model checking)
- BSAFE Crypto-C
- MetaC, Xrunner (test tools)
- Ethereal (network analyzer)
- SUIF (modular compiler for National Compiler Infrastructure Project)
- Verity Developer's Kit (VDK)

Curriculum Vitae

Security and High-Assurance:
- Secure Operating Systems
- Partitioning Kernel
- Confidentiality, Integrity, Non-Repudiation, DoS, Covert Channels
- Identification & Authentication
- Authorization methods
- Biometrics, Smart Cards, Tokens
- Security Architecture
- Security Policy and Models
- Network Security
- Digital Rights Management
- Secure Content Distribution
- Multi-Level Security, Multiple Independent Levels of Security/Safety
- Type Enforcement, Capabilities
- Firewall, Intrusion Detection, VPN
- Deception (Honey Pot)
- Hierarchical Development Methodology
- Design/Code Verification
- Protocol Specification and Verification
- Model Checking
- TCSEC (Orange Book) Criteria
- Common Criteria / Protection Profiles
- DO-178B Software standards for Airborne systems
- Quality Engineering
- Applications of cryptography

Cryptography:
- Public-Key
- SHA, DSA
- PKCS
- RC2/4/5
- RSA
- OTP applications
- SET
- DES and AES
- X.509

Programming Languages:
- C / C++
- Java
- Prolog, and variants
- Lisp, Scheme
- Standard ML
- Assembler for Intel, Motorala, MIPS, Sparc, IBM mainframe
- Unix shells and commands
- Perl, Awk
- PostScript
- Pascal & Object Pascal
- Fortran, Cobol & PL/1

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Positions Held

From: 2003   LynuxWorks
To: Present   San Jose, CA
        Position: Staff Scientist
        - Assurance and security for all operating system products
        - Formal methods for high-assurance products

From: 2003   Santa Clara University
To: Present   Santa Clara, CA
        Position: Adjunct Professor, Department of Computer Engineering
        - Member of the staff of the Center for Advanced Study and Practice of Information Assurance (CASPIA)
        - Developed and teaches Secure Systems Development and Evaluation I and II in the graduate program
        - Teaches graduate level Principles of Programming Languages

Curriculum Vitae

From:	2000	Trusted Systems Laboratories
To:	Present	San Jose, CA
	Position:	President and CEO, Founder

From:	2000	Plenar Corporation
To:	2000	San Jose, CA
	Position:	Vice President & General Manager, Silicon Valley Operation

From:	1997	Lockheed Martin M&DS WR
To:	2000	San Jose, CA
	Position:	Founder and Manager, Trusted Systems Laboratory

From:	1992	Sun Microsystems
To:	1997	Palo Alto, CA
	Position:	Quality Engineering Manager, Senior Staff Engineer, Secure Software Engineering Dept.

From:	1990	Kubota Pacific Computer Inc.
To:	1992	Santa Clara, CA
	Position:	Manager, System Software Environment Section
	Position:	Manager, Engineering and Customer Training

From:	1989	Trio Software Systems
To:	1990	San Mateo, CA
	Position:	Director, Product Support

From:	1987	IntelliGenetics, Inc
To:	1989	Mountain View, CA
	Position:	Director, Product Group

From:	1986	Quintus Computer Systems
To:	1987	Mountain View, CA
	Position:	Manager, Architectural Support

From:	1983	The Wollongong Group
To:	1986	Palo Alto, CA
	Position:	Director of Software Development

From:	1978	Ford Aerospace and Communications
To:	1983	Palo Alto, CA
	Position:	Security and Formal Methodology Section, Section Supervisor
	Position:	Program Manager: Provably Secure Operating System (PSOS)

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Curriculum Vitae

Patent and Litigation Support

Date: 1995-98   Robert P. Sabath, Esq.
         Projects: Patent consulting and drafting
         Status: Closed

Date: 2002   Fish & Neave
         Case: Undisclosed
         Project: Patent portfolio analysis and prior art research
         Status: Closed

Date: 2002-03   Steinhart & Falconer
         Case: Undisclosed
         Project: Expert Report & Rebuttal
         Status: Closed

Date: 2003-04   Sonnenschein, Nath & Rosenthal
         Case: Undisclosed
         Project: Expert Report, Rebuttal, and Deposition
         Status: Closed
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Professional Associations
- The Open Group, High-Assurance Real-Time and Embedded Forum (2005)
- Stanford University Computer Forum for Industrial Affiliates (since 1999)
- ACM (since 1980); IEEE (since 1986)
- Trusted Solaris Business Development Forum (2001)
- MIPS Community ABI Technical Committee (1990-91)
- Unix International and OSF/1 liaison (1991-92)
- ARC (Advanced RISC Computer) MP Technical Committee (1991)

Patents

Patent Number	Date Issued	Title
6,247,169	2001	Structured exception-handling methods, apparatus, and computer program products.
5,892,947	1999	Test support tool system and method.
5,634,002	1997	Method and system for testing graphical user interface programs.

Education

Year	College/University	Degree or Field of Study
1993-99	Stanford University	Post-grad study in Computer Science
1998-99	Courses with Bernard Sklar of UCLA	Digital Communications and Advanced Digital Communications
1976-77	Lehigh University	Masters Program in Computer Science
1976	Moravian College	BA Philosophy
1975	Moravian College	BS Physics and Mathematics